

## ABSTRACT OF THE DISCLOSURE

A simplified system for sensing the movement and/or position on both axes of a moving surface, such as a photoreceptor belt of a xerographic printer, or a sheet transport of an ink jet printer, utilizing a linear track of small and closely spaced "Z" shaped marks on or in a moving belt or roller surface. These marks are used to accurately incrementally directly detect surface motions in both orthogonal axes with a co-linear optical sensor linear array of a multiplicity of individual pixel optical detectors which respectively detect and compare the changes in positions relative thereto of the transverse and angled lines of those Z marks during frequent short measurement intervals. This exemplary system provides direct, and thus more accurate, surface movement measurement information, with much less critical and less costly marking requirements, and greater tolerance for variations in the subject surface, as compared to indirect or conventional encoder type positional sensors.

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